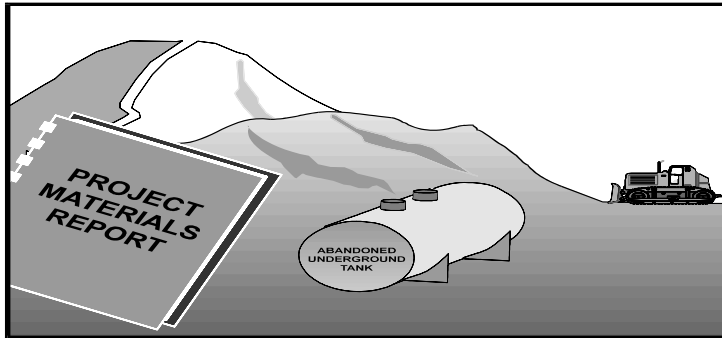


ACTIVITY: Contaminated Soil Management

CP – 09

**Targeted Constituents**

! Significant Benefit		™ Partial Benefit		" Low or Unknown Benefit	
™ Sediment	" Heavy Metals	" Floatable Materials	" Oxygen Demanding Substances	" Nutrients	! Toxic Materials
" Oil & Grease	" Bacteria & Viruses	" Construction Wastes			

Implementation Requirements

! High		™ Medium		" Low	
" Capital Costs	™ O & M Costs	™ Maintenance	" Suitability for Slopes >5%	™ Training	

Description

Prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly. This management practice is likely to create a significant reduction in toxic materials as well as a partial reduction in sediment.

Suitable Applications

- # Applicable to many construction projects, especially those in highly urbanized or industrial areas, where soil contamination may have occurred due to spills, illicit discharges, and underground storage tanks.
- # Applicable to highway widening projects in older areas where median and shoulder soils may have been contaminated by aerially deposited lead.

Approach

Contaminated soils are often identified in the project material report with known locations identified in the plans and specifications. The contractor shall review applicable reports and investigate appropriate callouts in the plans and specifications.

Contaminated soils may occur on your site for several reasons including:

- # Past site uses and activities;
- # Detected or undetected spills and leaks; and
- # Acid or alkaline solutions from exposed soil or rock formations high in acid or alkaline-forming elements.

Most developers conduct pre-construction environmental assessments as a matter of routine. Recent court rulings holding contractors liable for cleanup costs when they unknowingly move contaminated soil, highlight the need for contractors to confirm

that a site assessment is completed before earth moving begins.

The following steps will help reduce stormwater pollution from contaminated soil:

- # Conduct thorough site planning including pre-construction geologic surveys.
- # Look for contaminated soil as evidenced by discoloration, odors, differences in soil properties, abandoned underground tanks or pipes, or buried debris.
- # Prevent leaks and spills to the maximum extent practicable. Contaminated soil can be expensive to treat and/or dispose of properly. However, addressing the problem before construction is much less expensive than after the structures are in place.
- # For a quick reference on disposal alternatives for specific wastes, see the table presented in the Employee/Subcontractor Training BMP fact sheet.

Application of this BMP Fact Sheet

Excavation, transport, and disposal of contaminated material and hazardous material shall be in accordance with the rules and regulations of the following agencies (the specifications of these agencies shall supersede the procedures outlined in this BMP):

- United States Department of Transportation (USDOT);
- United States Environmental Protection Agency (USEPA);
- Tennessee Department of Environment and Conservation (TDEC);
- Tennessee Division of Occupation Safety and Health Administration (T-OSHA); and

Education

- # Prior to performing any excavation work at the locations containing material classified as hazardous, employees and subcontractors shall complete a safety-training program.
- # Educate employees and subcontractors on contaminated soil handling and disposal procedures.
- # Instruct employees and subcontractors in identification of contaminated soil.
- # Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- # Provide additional training for field supervisors and inspectors, including hazardous material safety training.

Handling Procedures for Material with Aerially Deposited Lead

- # Materials from areas designated as containing aerially deposited lead may, if allowed by the contract special provisions, be excavated, transported, and used in the construction of embankments and/or backfill.
- # Excavation, transportation, and placement operations shall result in no visible dust.
- # Use caution to prevent spillage of lead containing material during transport.
- # Monitor the air quality during excavation of soils contaminated with lead.

Handling Procedures for Contaminated Soils or Hazardous Materials

- # Test suspected soils at a certified laboratory.
- # If the soil is contaminated, work with TDEC to develop options for treatment and/or disposal.
- # Avoid temporary stockpiling of contaminated soils or hazardous material.
- # If temporary stockpiling is necessary:
 1. Cover the stockpile with plastic sheeting or tarps.
 2. Install a berm around the stockpile to prevent runoff from leaving the area.
 3. Do not stockpile in or near storm drains or watercourses.
 4. Implement stockpile controls as presented in CP-05: Material Delivery, Storage, and Use.
- # Contaminated material and hazardous material on exteriors of transport vehicles shall be removed and placed either into the current transport vehicle or the excavation prior to the vehicle leaving the exclusion zone.
- # Monitor the air quality continuously during excavation operations at all locations containing hazardous material.
- # Procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work, including registration for transporting vehicles carrying the contaminated material and the hazardous material.
- # Collect water from decontamination procedures and dispose of at an appropriate disposal site.
- # Collect non-reusable personal protective equipment (PPE), once used by any personnel, and dispose of at an appropriate disposal site.
- # Install temporary security fence to surround and secure the exclusion zone. Remove fencing when no longer needed.

Procedures for Underground Storage Tank Removals

- # Prior to commencing tank removal operations, obtain the required underground storage tank removal permits and approval from TDEC, which has jurisdiction over such work.
- # Arrange to have tested, as directed by the Engineer, any liquid or sludge found in the underground tank prior to its removal to determine if it contains hazardous material.
- # Following the tank removal, take soil samples beneath the excavated tank and perform analysis as required by TDEC and the local agency representative(s).
- # The underground storage tank, any liquid and/or sludge found within the tank, and all contaminated material and hazardous material removed during the tank removal shall be transported to disposal facilities permitted to accept such material by a licensed hazardous waste hauler.

Water Control

- # Take all necessary precautions and preventive measures to prevent the flow of water, including ground water, from entering hazardous material or underground storage tank excavations. Such preventative measures may consist of, but are not limited to berms, cofferdams, grout curtains, freeze walls, and seal course concrete or any combination thereof.
- # If water does enter an excavation and becomes contaminated, such water, when necessary to proceed with the work, shall be discharged to clean, closed top, watertight, transportable holding tanks, and disposed of in accordance with federal, state, and local laws.

Requirements

- # Costs (Capital, O&M)
 - Prevention of leaks and spills is inexpensive.
 - Treatment and/or disposal of contaminated soil can be quite expensive.

Maintenance

- # Inspect excavated areas daily for indications of contaminated soil.
- # Implement CP-06: Spill Prevention and Control, to prevent leaks and spills as much as possible.
- # Monitor air quality continuously during excavation operations at all locations containing hazardous material.
- # Coordinate contaminated soils and hazardous material management with the appropriate federal, state, and local agencies.
- # Inspect hazardous waste receptacles and areas regularly.

Limitations

- # The procedures and practices presented in this BMP are general. The contractor shall identify appropriate practices and procedures for the specific contaminants

known to exist or discovered on site.

- # Contaminated soils that cannot be treated on-site must be disposed of off-site by a licensed hazardous waste hauler.
- # The presence of contaminated soil may indicate contaminated water as well. See CP-02: Dewatering Operations for more information.

**Primary
References**

California Storm Water Best Management Practice Handbooks, Construction and Industrial Handbooks, CDM et.al. for the California SWQTF, 1993.

Caltrans Storm Water Quality Handbooks, CDM et.al. for the California Department of Transportation, 1997.

**Subordinate
References**

Blueprint for a Clean Bay-Construction-Related Industries: Best Management Practices for Storm Water Pollution Prevention; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

Processes, Procedures, and Methods to Control Pollution Resulting from all Construction Activity; USEPA, 430/9-73-007, 1973.

Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.